

What Is Claimed Is:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising amino acids 1 to 271 in Figures 1A-B;
- (b) a nucleotide sequence encoding a polypeptide comprising amino acids from about 30 to about 271 in Figures 1A-B;
- (c) a nucleotide sequence encoding a polypeptide comprising amino acids Asp-30 to Glu-57 in Figures 1A-B;
- (d) a nucleotide sequence encoding amino acids 1 to 194 of Figure 2;
- (e) a nucleotide sequence encoding a polypeptide having the amino acid sequence encoded by the cDNA clone contained in clone HCFMV39 (ATCC Deposit Number 97974 or 209080) or HMUCL01 (ATCC Deposit Number PTA-2259);
- (f) a nucleotide sequence encoding the mature TR21 or TR22 polypeptide having the amino acid sequence encoded by the cDNA clone contained in clone HCFMV39 or HMUCL01, respectively;
- (g) a nucleotide sequence encoding the extracellular domain of the TR21 or TR22 polypeptide having the amino acid sequence encoded by the cDNA clone contained in clone HCFMV39 or HMUCL01, respectively;
- (h) a nucleotide sequence encoding the transmembrane domain of the TR21 or TR22 polypeptide having the amino acid sequence encoded by the cDNA clone contained in clone HCFMV39 or HMUCL01, respectively;
- (i) a nucleotide sequence encoding the intracellular domain of the TR21 or TR22 polypeptide having the amino acid sequence encoded by the cDNA clone contained in clone HCFMV39 or HMUCL01, respectively;
- (j) a nucleotide sequence encoding the TR21 or TR22 receptor extracellular and intracellular domains with all or part of the transmembrane domain deleted; and

(k) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), (e), (f), (g), (h), (i) or (j).

2. The nucleic acid molecule of claim 1, wherein said polynucleotide comprises the nucleotide sequence in Figure 1.

3. The nucleic acid molecule of claim 1, wherein said polynucleotide comprises the nucleotide sequence in Figure 2.

4. The nucleic acid molecule of claim 1, wherein said polynucleotide has the complete nucleotide sequence of the cDNA clone contained in HCFMV39.

5. The nucleic acid molecule of claim 1, wherein said polynucleotide has the complete nucleotide sequence of the cDNA clone contained in HMUCL01.

6. An isolated nucleic acid molecule comprising a polynucleotide which hybridizes under stringent hybridization conditions to a polynucleotide having a nucleotide sequence identical to a nucleotide sequence in (j) of claim 1, wherein said polynucleotide does not hybridize under stringent hybridization conditions to a polynucleotide having a nucleotide sequence consisting of only A residues or of only T residues.

7. An isolated nucleic acid molecule comprising a polynucleotide which encodes the amino acid sequence of an epitope-bearing portion of a TR21 receptor having an amino acid sequence in Figures 1A-B or encoded by clone HCFMV39.

8. An isolated nucleic acid molecule comprising a polynucleotide which encodes the amino acid sequence of an epitope-bearing portion of a TR22 receptor having an amino acid sequence in Figure 2 or encoded by clone HMUCL01.

9. An isolated nucleic acid molecule comprising encoding a polypeptide having an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

- (a) the amino acid sequence of Figures 1A-B;
- (b) the amino acid sequence encoded by the cDNA of clone HCFMV39;
- (c) the amino acid sequence of Figure 2; and
- (d) the amino acid sequence encoded by the cDNA of clone HMUCL01.

10. An isolated polypeptide encoded by the nucleic acid molecule of claim 9.

11. An isolated polypeptide comprising an antigenic epitope contained in a polypeptide having an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of Figures 1A-B;
- (b) the amino acid sequence encoded by the cDNA of clone HCFMV39;
- (c) the amino acid sequence of Figure 2; and
- (d) the amino acid sequence encoded by the cDNA of clone HMUCL01.

12. An isolated antibody that binds specifically to the polypeptide of claim 10.

13. An isolated antibody that binds specifically to the polypeptide of claim 11.

14. A method of treating an immune disorder comprising administering an effective amount of the polypeptide as claimed in claim 10, or an agonist thereof to a patient in need thereof.

15. A method of treating an immune disorder comprising administering an effective amount of the antibody as claimed in claim 12.

16. An isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide wherein, except for one to ten conservative amino acid substitutions, said polypeptide has an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of Figures 1A-B;
- (b) the amino acid sequence encoded by the cDNA of clone HCFMV39;
- (c) the amino acid sequence of Figure 2; and
- (d) the amino acid sequence encoded by the cDNA of clone HMUCL01.

17. An isolated polypeptide wherein, except for one to ten conservative amino acid substitutions, said polypeptide has a sequence selected from the group consisting of:

- (a) the amino acid sequence of Figures 1A-B;
- (b) the amino acid sequence encoded by the cDNA of clone HCFMV39;
- (c) the amino acid sequence of Figure 2; and
- (d) the amino acid sequence encoded by the cDNA of clone HMUCL01.

18. The antibody of claim 12 that is an scFv fragment.

19. The antibody of claim 12 that is an Fab fragment.

20. A method of inhibiting proliferation of a cell expressing TR21 or TR22, comprising contacting the cell with an antagonistic antibody or antibody fragment, or other antagonist of TR21 or TR22.

21. A method of enhancing proliferation of a cell expressing TR21 or TR22, comprising contacting the cell with an agonistic antibody or antibody fragment, or other agonist of TR21 or TR22.